

## CAVITY EMBEDDED ANTENNA

### CROSS REFERENCE TO RELATED APPLICATION

This application is related to US application Serial No. 10/405,147 filed April 3, 2003, now US Patent No. 6,828,947.

### FIELD OF INVENTION

This invention relates to cavity-embedded antennas and more particularly to a transmission line loaded antenna configuration for providing ultra wide bandwidth.

### BACKGROUND OF THE INVENTION

#### Meander Line Loaded Antennas

As described in U. S. Patent Application Number 10/251,131, filed September 20, 2002 by John T. Apostolos assigned to the assignee hereof and incorporated herein by reference, a wide band meander line antenna is configured to be flush mounted to a conductive surface serving as a ground plane by embedding the meander line components within a conductive cavity surrounded at its top edge by the ground plane. This is done with the antenna looking out of the cavity recessed in the surface. By permitting flush mounting of a meander line antenna, not only can the antenna dimensions be minimized due to the use of the meander line loaded antenna configuration, but in aircraft applications no part of the antenna exists above the skin of the aircraft, thereby to minimize turbulence flow.

Moreover, when adapted to wireless handsets or laptop computers, the depth or thickness of the unit need not be increased when providing a wide band antenna, thus to minimize the overall dimensions of the device. Additionally, the flush mounted meander line antenna when utilized in a roof such as in a car does not result in an unsightly protrusion from the top of the car, but rather is hidden in the recessed cavity. This permits that a vehicle can be provided with a wide band antenna that covers not only cellular frequencies but also the PCS band, 802.11, and GPS frequencies.